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## Two New Mammals from Negros Island, Philippines

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Collections of mammals from Negros Island by D. S. Rabor and A.

T. Torres, both of Silliman University, made with the aid of funds from the Chicago Natural History Museum include a new subspecies of bat and a new species of shrew.

The bat is the first unquestioned record of the genus *Dobsonia* in the Philippines. Taylor (1934) includes *D. peroni* in the mammal fauna of the Philippines based on a doubtful record from Samar by Trouessart (1898-99) and in his remarks wrote that it "should be regarded as doubtful." The Philippines are not normally included in the geographic range of the genus *Dobsonia*. Andersen (1912) gives the geographic range of the genus as "..... Celebes, Flores, and Timor in the west, through the Moluccas, to New Guinea, the Bismarck Archipelago, and Solomon Islands, as far as the islands of San Christoval and Ugi, but not extending to Australia." The present record extends the range of the genus farther north to the Philippines.

The shrew is the first record of the genus *Crocidura* on Negros Island. It is interesting to note that before this Negros Island record no species of the genus had been recorded from any island between Mindanao and Mindoro. The range of the genus *Crocidura* in the Philippines now includes Luzon, Mindoro, Palawan, Mindanao and Jolo.

The specimens were compared with the collections of the Chicago Natural History Museum, the American Museum of Natural History and the U. S. National Museum, for which I am grateful to these institutions.

These museums do not have *D. v. viridis* and *D. v. crenulata* so that comparisons with these two forms are based solely on Andersen's descriptions of the species.

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*Dobsonia viridis* chapmani, **subsp. nov.**

*Type.* From Pagayabonan, Bais, Negros Island, Philippines. No. 66317, Chicago Natural History Museum. Adult male, skin and skull. Collected May 13, 1949, by D. S. Rabor. Original number 399.

*Diagnosis.* Closely related to *viridis* Heude and *crenulata* Andersen of the *viridis* group, but larger with distinctly longer and broader skull, and decidedly longer foot and pollex. The tail is shorter than in *crenulata*. Upper tooth row (c-m<sup>2</sup>, crowns) 21.8; forearm 128.

*Color.* Type: Face between the eyes and top of head between the ears Bister (Ridgway, 1912) to Mummy Brown; mantle dark Raw Umber; back between Blackish Brown (2) and Blackish Brown (3); throat Raw Umber; center of breast Saccardo's Umber; sides of breast and belly Drab; wing membrane Black; fur along forearm on wing membrane golden Tawny-olive.

In two male paratypes the mantle is lighter Saccardo's Umber, in one of which this color forms a narrow band on the back of the neck, the rest of the mantle being dark Raw Umber. In two other paratypes the breast, belly and sides are uniform Drab without any trace of the narrow breast patch of Saccardo's Umber. The fur in all specimens rather sparse.

*Skull.* Similar to that of *viridis* and *crenulata* but longer and broader; premaxillae and canines proclivous; mandible decidedly longer and higher at coronoid process.

*Teeth.* Similar to those in *viridis* and *crenulata* with the canines relatively much heavier and with minor differences in some tooth proportions; p<sup>3</sup> longer and broader; p<sub>i</sub>, p<sub>3</sub> and p<sub>4</sub> decidedly broader; m<sub>2</sub> slightly longer; wider across crowns of m<sup>1</sup> and canines externally; upper and lower tooth rows decidedly longer; i<sub>2</sub> reduced and deciduous in some individuals; in eleven adult skulls examined i<sub>2</sub> are both present in five, absent on one side in one, and totally absent in five.

*Measurements of type.* Taken in the flesh: Forearm 128 mm.; tibia 56; foot 38; tail 15; ear from meatus 22.

Skull: Greatest length 52.7; condylo-basal length (to front of canine) 51.1; palatal length (to front of incisors) 26.4; interorbital breadth 9.8; intertemporal breadth 7.8; zygomatic width 32.2; mastoid width 20.4; width of brain-case at zygoma 21.2; orbit to nares 12.5; orbital diameter 10.6; upper tooth row 21.8; width across canines, externally 11.6; width across m<sup>1</sup> - m<sub>l</sub>, externally 16.6; mandible length, from condyle 42.8; coronoid height of mandible 23.3; lower tooth row (c-m<sub>3</sub>) 23.

Teeth: Length and width, p<sup>3</sup> 4.6 x 3.8; p<sup>4</sup> 4.2 x 3.8; m<sup>1</sup> 5.7 x 3.1; m<sup>2</sup> 2.5 x 1.9; p<sub>1</sub> 1.5 x 2.3; p<sub>3</sub> 4.4 x 3.2; p<sub>4</sub> 4.3 x 3.1; m<sub>1</sub> 4.6 x 2.6; m<sub>3</sub> 3.6 x 2.6; m<sub>3</sub> 2 x 1.7.

## Measurements of Skulls and Tooth Rows

|   | <i>D. v. viridis</i><br>mm. | <i>D. v. crenulata</i><br>mm. | <i>D. v. chapmani</i><br>mm. |
|---|-----------------------------|-------------------------------|------------------------------|
| Skull, total length to gnathion                       | 46.5                        | 49                            | 49.9                         |
| " palation to incisive foramina                       | 20.5                        | 22                            | 20.4                         |
| " front of orbit to tip of nasals                     | 11.5                        | 12.3                          | 11.5                         |
| " width of brain-case at zygomata                     | 18.7                        | 19.7                          | 20                           |
| " zygomatic width                                     | 28.5                        | 30.5                          | 31.6                         |
| " across crowns of m <sup>1</sup> , externally        | 14.2                        | 15                            | 15.8                         |
| " lachrymal width                                     | 11.5                        | 11.8                          | 9.8                          |
| " across crowns of canines, externally                | 9.2                         | 9.8                           | 11.1                         |
| " postorbital width                                   | 7.5                         | 7.5                           | 7.8                          |
| " interorbital width                                  | 8                           | 9                             | 9.3                          |
| " between p <sup>4</sup> -p <sup>4</sup> , internally | 7                           | 7.2                           | 8                            |
| " between cingula of canines                          | 3                           | 3.2                           | 4.1                          |
| " orbital diameter                                    | 10.2                        | 11                            | 10.3                         |
| Mandible, length from condyle                         | 34.5                        | 38.2                          | 39.4                         |
| " coronoid height                                     | 19.5                        | 19                            | 20.5                         |
| Upper teeth, c-m <sup>2</sup> , crowns                | 18.2                        | 20                            | 21.6                         |
| Lower teeth, c-m <sup>3</sup> , crowns                | 19.6                        | 21                            | 20.5                         |
|   |                             | 20.7                          | 21.9                         |
|   |                             | 22                            | 23.6                         |

Following are comparative measurements of *viridis*, *crenulata* and *chapmani*. The measurements of the first two forms are those of Andersen (1912).

#### External Measurements

|                               | <i>D. v. viridis</i><br>mm. |      | <i>D. v. crenulata</i><br>mm. |       | <i>D. v. chapmani</i><br>mm. |      |
|-------------------------------|-----------------------------|------|-------------------------------|-------|------------------------------|------|
| Forearm                       | 111                         | 118  | 125                           | 128.5 | 124                          | 128  |
| Pollex, total length, c. u.   | 38.5                        | 43   |                               | 44.5  | 49                           | 53   |
| " metacarpal                  | 11.5                        | 13.5 |                               | 13.5  | 18                           | 19   |
| " 1st phalanx                 | 17.5                        | 22.5 |                               | 24    | 31.5                         | 35.5 |
| 2nd digit, metacarpal         | 47                          | 52.5 | 53                            | 58    | 55                           | 60   |
| " 1st phalanx                 | 10.5                        | 13   | 12                            | 14    | 12                           | 14   |
| " 2nd phalanx                 | 5                           | 7.5  | 6.5                           | 7.5   | 5                            | 7    |
| " 3rd phalanx                 | 1.5                         | 2    |                               | 1.5   | 2.5                          | 3    |
| 3rd digit, metacarpal         | 67                          | 73.5 | 77                            | 80.5  | 78                           | 82   |
| " 1st phalanx                 | 49.5                        | 54.5 | 55.5                          | 62    | 56                           | 60   |
| " 2nd phalanx                 | 70                          | 79.5 | 75                            | 83    | 78                           | 85   |
| 4th digit, metacarpal         | 62                          | 68   | 68.5                          | 73    | 73                           | 79   |
| " 1st phalanx                 | 41.5                        | 46   | 48                            | 54.5  | 46                           | 48   |
| " 2nd phalanx                 | 44.5                        | 48.5 | 49                            | 56    | 50                           | 54   |
| 5th digit, metacarpal         | 64.5                        | 70   | 71.5                          | 75.5  | 76                           | 81   |
| " 1st phalanx                 | 33.5                        | 38   | 38                            | 42.5  | 37                           | 40   |
| " 2nd phalanx                 | 38.5                        | 43.5 | 43                            | 49    | 43                           | 49   |
| Ear, length from orifice      | 22.5                        | 26   |                               | 27.5  | 19                           | 27   |
| " greatest breadth, flattened | 12.5                        | 14   |                               | 16.5  | 14                           | 15   |
| Tail                          | 18.5                        | 22   |                               | 28.5  | 11                           | 23   |
| Tibia                         | 44                          | 51   |                               | 56.5  | 53                           | 56   |
| Foot, c. u.                   | 27                          | 31   |                               | 31    | 36                           | 39   |
| Calcar                        | 11                          | 11   |                               | 12.5  | 11                           | 12.5 |

#### Measurements of Teeth

|                         | <i>D. v. viridis</i><br>mm. |     | <i>D. v. crenulata</i><br>mm. |     | <i>D. v. chapmani</i><br>mm. |     |
|-------------------------|-----------------------------|-----|-------------------------------|-----|------------------------------|-----|
| p <sup>2</sup> , length | 3.9                         | 4.2 | 4.1                           | 4.3 | 4.4                          | 4.7 |
| " width                 | 2.8                         | 3.2 | 3.1                           | 3.7 | 3.7                          | 3.9 |
| p <sup>4</sup> , length | 3.8                         | 4.2 | 4                             | 4.5 | 4                            | 4.6 |
| " width                 | 2.9                         | 3.2 | 3.1                           | 3.7 | 3.5                          | 3.8 |
| m <sup>1</sup> , length | 4.7                         | 5.1 | 5.2                           | 6   | 5.4                          | 5.7 |
| " width                 | 2.5                         | 2.8 | 3                             | 3.2 | 3.1                          | 3.4 |
| m <sup>2</sup> , length | 1.8                         | 2.5 | 2                             | 2.7 | 2.2                          | 2.5 |
| " width                 | 1.2                         | 1.8 | 1.6                           | 2   | 1.8                          | 2   |
| p <sub>1</sub> , length | 1                           | 1.6 | 1.2                           | 1.5 | 1.3                          | 1.5 |
| " width                 | 1.5                         | 1.8 | 1.5                           | 1.8 | 2                            | 2.4 |
| p <sub>2</sub> , length | 3.7                         | 4   | 4.1                           | 4.7 | 4.1                          | 4.5 |
| " width                 | 2.2                         | 2.6 | 2.3                           | 2.7 | 3.2                          | 3.4 |
| p <sub>4</sub> , length | 4                           | 4.3 | 4.5                           | 4.8 | 4.3                          | 4.6 |
| " width                 | 2.2                         | 2.7 | 2.7                           | 2.8 | 2.9                          | 3.3 |
| m <sub>1</sub> , length | 3.8                         | 4   | 4                             | 4.7 | 4.5                          | 4.7 |
| " width                 | 2                           | 2.2 | 2.2                           | 2.8 | 2.5                          | 2.7 |
| m <sub>2</sub> , length | 3                           | 3.2 | 3.2                           | 3.7 | 3.6                          | 3.9 |
| " width                 | 2                           | 2.2 | 2.2                           | 2.7 | 2.5                          | 2.7 |
| m <sub>3</sub> , length | 1.2                         | 1.8 | 1.8                           | 2.1 | 1.9                          | 2.2 |
| " width                 | —                           | —   | 1.6                           | 1.8 | 1.7                          | 1.9 |

*Specimens examined.* Type and eight male paratypes; two females from Amio.

*Remarks.* The presence or absence of the antero-internal basal ledge or cusp on  $m_1$ , used by Andersen as a very important diagnostic character for dividing the different species of *Dobsonia* into various groups, has been found to be variable in the present form. Of eleven specimens examined, this antero-internal basal ledge of  $m_1$  is absent in two males, present only on one side in two males (including the type specimen where it is found only on the left  $m_1$ ), and present normally in the rest. On the average, this ledge is not so well developed in the present form as in the other forms of the *viridis* group examined in the American Museum of Natural History and the U. S. National Museum.

The subspecies is named after Dr. James W. Chapman, retired Presbyterian Missionary and Professor of Biology, who unselfishly spent thirty-five years in Silliman University, teaching biology to Filipino students and doing his best towards developing their interest in natural history.

*Field notes.* Eighteen males were collected inside Mambaho Cave, Pagayabonan, Bais, in the interior of Negros Island, inside dense original dipterocarp forest. This cave is really a small portion of one of the systems of caverns very common in this region, produced by subterranean streams as they erode the underlying limestone rocks. In one place part of the roof had caved in, perhaps due to the weight of the vegetation on top of it, producing a roughly circular hole about ten meters across and seven meters deep, through which the bats entered and left the cave. Exposed below was a portion of the narrow but deep underground stream along one side of the hole, entering on one side of the opening of the large cavern and disappearing in the darkness inside. The cavern exuded a peculiarly strong odor which resembled that of  $H_2S$ , which was not due to the excreta of the bats as there was practically no guano deposit, because the stream carried away the waste material from these animals.

At the time of collection there were about three hundred bats inside the cavern hanging from the roofs and on the walls in groups of various sizes. The largest contained about thirty bats roosting very close to one another, and the others from four to about a dozen each. When the electric torch was turned on them, their eyes gleamed brightly reddish and the reflections produced by the different groups on the various places on the walls and roof made fancy and beautiful patterns. Specimens collected from different groups were all males, and it is possible that the colony was all of this sex. Taken in the cave at the same time were one *Harpionycteris whiteheadi* Thomas, five *Hipposideros pygmaeus* (Waterhouse) and two *Rhinolophus arcua-*

*tus exiguus* Andersen, which species taken together were much fewer than *Dobsonia*.

On May 20 and 21, 1948, two females were taken at night in Amio, in the interior of Negros Island, among the coconut palms on the banks of the Amio River. These were seen to alight on the underside of a coconut frond. They suspended themselves from the air, instead of alighting on a frond and then crawling to a roosting spot. One female carried a young one hanging to it.

*Crocidura negrina* **sp. nov.**

*Type.* From Dayongan, altitude 4500 feet, Cuernos de Negros, Negros Island, Philippines. No. 78445, Chicago Natural History Museum. Adult female, skin and skull. Collected April 20, 1951, by A. T. Torres. Original number 803.

*Diagnosis.* Closest to *C. mindorus* Miller in size but color much darker and with less reddish on upper parts; closer to *C. halconus* Miller in color.

*Color.* Upperparts nearest Blackish Brown (3) of Ridgway; tinged with gray; underparts between Fuscous and Hair Brown, with numerous minute whitish spots especially on belly; feet and tail blackish; long hairs on tail light brown.

*Skull and Teeth.* The skull and teeth are very similar to those of *C. mindonus*.

**Measurements**

|                             | <i>C. mindorus</i><br>Type<br>mm. | <i>C. mindorus</i><br>Topotype<br>mm. | <i>C. negrina</i><br>Type<br>mm. |
|-----------------------------|-----------------------------------|---------------------------------------|----------------------------------|
| Head and body               | 91                                | 98                                    | 88                               |
| Tail                        | 72                                | 75                                    | 68                               |
| Hind foot, dry              | 16.4                              | 16                                    | 16                               |
| Skull, condylo-basal length | 21.6                              | 22.6                                  | 22.6                             |
| Palatal length              | —                                 | 10.3                                  | 10.3                             |
| Breadth of brain-case       | 10.0                              | 10.5                                  | 10.3                             |
| Mandible                    | 12                                | 11.8                                  | 11.9                             |
| Upper tooth row, entire     | 9.8                               | 9.8                                   | 9.8                              |
| Lower tooth row             | 9                                 | 9                                     | 9                                |

*Remarks.* The type is the only specimen known.

*Field notes.* The shrew was taken in a trap placed inside dense original forest, beside a dry creek heavily grown to ferns.

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